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Partial Irido-plegia
Changes at Macula following Iritis

OPHTHALMIC MEMORANDA.*

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Illustrated.

CASE I. PARALYSIS OF THE LOWER HALF OF THE IRIS (PARTIAL IRIDO-PLEGIA) AS A SEQUEL OF IRITIS.—Even after perfectly cured cases of iritis slight traces of the original disease can usually be detected: pigment on the lens capsule, small points of former synechiae spots of discoloration, atrophic fibres, etc.; but in my experience it is uncommon to observe as the sole sequel of severe irido-cyclitis complete loss of the action of one-half of the iris, all other functions of the eye having been restored to the normal state.

Mary A., unmarried, aged 20, born in the United States, consulted me on the 10th of January, 1898, for relief from an attack of inflammation of the left eye.

History.—The patient was a slender girl, of good coloring, who maintained that she had always been in perfect health, her only complaint of general disability being an occasional attack of lumbago. The family history was good, and there was no reason to suspect specific taint. Six days prior to her visit the left eye began to be painful and watery, and neuralgic pains began to shoot through the brow on the same side. The next day the pain was much worse, and the eye became intensely, congested and tender. The weather at the time was very cold, and the patient, during a menstrual epoch, had gone skating, and afterwards had ridden for a long distance in an unheated car.

Examination.—V.=5/30 with difficulty. There were fine pericorneal injection, general bulbar flushing, corneal haze punctated below, discoloration of the iris, and deep anterior chamber, but no synechiæ. The pupil dilated evenly under the influence of a mydriatic. Only a very hazy view of the fundus was obtained.

Atropine, hot compresses and salicylate of sodium were ordered. No improvement occurred in three days; in fact, the ciliary tenderness and flushing increased, and the fine punctate haze in the cornea settled into a more or less characteristic triangular patch of dots upon Descemet's membrane. Tension was slightly raised, and vision sank to the ability to count fingers at one foot.

The temple was now leeched, and for the salicylate of sodium were substituted iodide of potassium and bichloride of mercury. For several days the haze in the cornea and the discoloration of the vitreous were so great that only a faint reflex from the fundus was obtainable. Then there was gradual clearing of the inflammatory and exudative processes and breaking loose of one small synechia which had formed below. The pupil remained perfectly round while under the influence of the mydriatic.

*Read in part before the Section of Ophthalmology of the College of Physicians of Philadelphia, October 18, 1898.

At the expiration of a month the eye-ground could be seen, the disc being congested and hazy, and with +1 D.c axis 180, V.=6/12. At the end of another month this astigmatism disappeared and with + 75 D.V.=V6/5. The iris regained its color, and the media were entirely clear with the exception of a few points of fine haze in the lower portion of Descemet's membrane, which could be determined only with a corneal loup.

On April 19, 1898, or three months after the attack of iritis, vision without correction being 6/5 the amplitude of accommodation 10 D., and the media clear, the pupil under the influence of direct daylight assumed a horizontally oval shape, while the opposite pupil was perfectly round. The movements of the iris were present only in its upper half, the *lower half being completely paralyzed.* Strychnia was ordered, and the patient was not again seen for two months, when precisely the same conditions obtained, i. e., only the upper part of the iris was mobile. This partial iridoplegia has continued to the present time, giving no inconvenience, and not being readily detectable unless the eyes are submitted to the ordinary examinations for eliciting the pupillary reflexes.

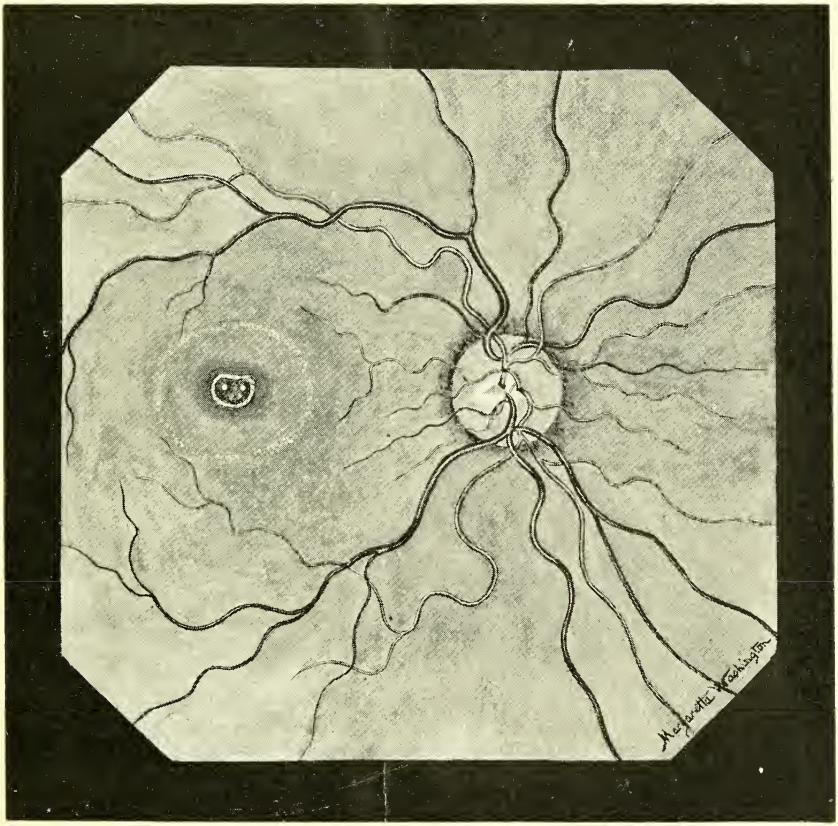
A similar condition after a blow on the eye, that is partial traumatic mydriasis, is a comparatively common occurrence, and may be due to injury of the delicate nerve endings in the sphincter of the iris, associated sometimes with a tear in this membrane. In the present case the loupe fails to show any difference in the appearance of the iritic fibres in the paralyzed and the non-paralyzed area, and, as already stated, there is not the slightest disturbance of any other function of the eye. Evidently the nerve endings or filaments which supply the lower half of the iris have been permanently injured by the preceding inflammatory process.

Case II. Symmetrical Changes at the Macula Following Iritis, Probably Due to Degeneration of the Retinal Ganglion Cells.—In March, 1896, I called the attention of the Fellows of the Section to an unusual form of macular change which occurred in a woman, aged 55 years, one year after a severe attack of serous iritis. It was then described as follows:*

"Exactly at the center of the macular region was an oval, grayish red area, about one-third the size of the optic disc, and containing in its center two yellowish white dots. This spot was surrounded by a greenish ring, somewhat raised, so that the reddish portion appeared as if at the bottom of a small pit, the sides of which were composed of the greenish border described. The macular reflex was unusually distinct." The accompanying illustration, obtained from a water color made at that time and then exhibited, gives, as well as an uncolored picture can, the appearance of this peculiar spot.

Practically, no favorable result was reached by treatment, although the various alteratives—mercury, iodide of potassium, arsenic, etc.—were tried

*1. The Philadelphia Polyclinic, Vol. V, 1896, No. 29.



in succession. A little more than a year after the appearance of this lesion, namely, on March 1, 1897, the spot was still distinctly visible, and presented the characteristics already described, except that the greenish ring was no longer manifest, and the reddish part which had occupied the center of the circle was not quite so distinct.

The vision of the left eye had remained as good as ever it had been after the original attack of iritis, namely, 6/12, until this date, when it began to fail, and became 6/45. There were some vitreous opacities, one large semi-transparent one closely resembling a huge epithelial cell, but these opacities had been more or less constant ever since the original attack of iritis.

On the 23d of the same month an area of macular degeneration exactly like that which occurred in the right eye began to be visible, and in a few days assumed the characteristics which belong to the one upon the opposite side, so that the illustration then made is an equally good picture of the present lesion. Vision, however, on this side never sank quite as low as it did on the other, and at the last examination, about half a year ago, was 6/60, medication, as in the former instance, having had practically no effect upon the area of degeneration. The lesions were then exactly symmetrical.

In the first communication I suggested that the reddish material in the center of the area might be accounted for by the products of a hemorrhagic extravasation, but that the deep greenish ring which surrounded this mass was not readily explainable. In the absence of microscopic examination this explanation might be continued, but it is so evidently unsatisfactory that I wish to call attention to another and more probable hypothesis.

In the first place, the ophthalmoscopic appearances of the lesion are not those of a hemorrhage, which in my experience does not produce at any stage of its existence an oval, faintly granular, grayish-red area of this character. Moreover, I had the opportunity of seeing the second eye at short intervals just at the time when this appearance was developing, and there never was any sign of hemorrhage—only a gradual manifestation of this macular change. It is further suggestive that before the actual manifestation of the area of degeneration there was marked depreciation of vision, which would indicate that the percipient elements were undergoing changes which at that period no doubt would have been detected by the microscope but were not yet evident to the ophthalmoscope.

All of us are acquainted with the ophthalmoscopic picture of amaurotic family idiocy—the so-called symmetrical changes in the macula lutea, first described by Warren Tay. In these cases there is an oval, gray patch, larger than the optic disc, having a reddish spot in its center and somewhat resembling the cherry sport in the macula found after embolism

of the central artery of the retina. Although for some time it has been known that degenerative changes could be found in the cells of the cortex of the brain in these infants, the earlier microscopic examinations of the eyes were unsatisfactory. It has fallen to the lot of Dr. Ward Holden, of New York,* to examine the eyes of a case of this character under the care of Dr. Hirsch, and to find by means of Nissl's stain extensive changes in the ganglion cells, which changes, to quote the author, "readily explain the fundus picture, which, indeed, admits no other anatomical explanation." To attribute the present macular changes in the yellow-spot region to analagous ganglion-cell alterations is perhaps warranted in the light of these investigations, but of course could not be proven unless opportunity were given for making sections through such a spot as this. Independently of the interest which centers in its pathological origin, clinically the lesion is a most interesting one, and so far as my experience goes, and I believe I am correct also in quoting the experience of Dr. Norris and Dr. Jackson, is unique.

*Journal of Nervous and Mental Diseases, July, 1898.